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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,554	11/14/2003	Takashi Suzuki	3557G-000044	7972

27572 7590 03/07/2006

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EXAMINER
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WILLS, MONIQUE M

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 03/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/713,554

Applicant(s)

SUZUKI ET AL.

Examiner

Monique M. Wills

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2 and 7-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 7-9 is/are rejected.
- 7) ☒ Claim(s) 10-17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Amendment*

Claims 10-17 remain allowable over the prior art of record. Claim 1 stands rejected under 35 U.S.C. 102(b) as being anticipated by Yamahira et al. JP 08-162095. Claim 7 stands rejected under 35 U.S.C. 102(b) as being anticipated by Yamahira et al. JP 08-162095. Claims 8 & 9 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Yamahira et al. JP 08-162095. Claim 2 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Yamahira et al. JP 08-162095 in view of Bito et al. U.S. Patent 5,474,861. A brief reiteration is recited below.

### *Allowable Subject Matter*

Claims 10-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 10-13 would be allowable over the prior art of record, because the prior art is silent to a non-aqueous electrolyte secondary battery comprising a

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separator interposed between electrodes in opposite polarity, in such a way that the periphery of the plane of the negative electrode facing to the positive electrode is being projected to the plane of the positive electrode, and is surrounded by the periphery of the plane of the positive electrode.

Claims 14-17 would be allowable over the prior art of record, because the prior art is silent to a non-aqueous electrolyte secondary battery comprising a wound electrode assembly, wherein the negative electrode has a region within its innermost winding region with a first margin in the lengthwise direction facing the inner periphery of the winding part such that it projects from the end at the innermost winding region of the negative electrode, and a second margin in the lengthwise direction facing to the outer periphery of the winding part such that it projects from the end at the outermost winding region of the negative electrode, and a third margin and a fourth margin formed such that the ends in the widthwise direction of the positive electrode project from both ends positioned in the widthwise direction of the negative electrode.

*Claim Rejections – 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 & 7 is rejected under 35 U.S.C. 102(b) as being anticipated by Yamahira et al. JP 08-162095.

In re claim 1, Yamahira teaches a nonaqueous electrolyte secondary battery comprising a positive electrode formed from boronized graphite material with a born content of 2.5 to 4.0 wt%. See Abstract. The negative electrode occludes and releases lithium (par. 18). The electrolyte contains a lithium salt (par. 19).

With respect to claim 7, the limitations with respect to the d(002) spacing of less than 3.37 angstroms, a peak intensity of 188 eV and wavelength region of  $1580 \pm 100 \text{ cm}^{-1}$ , are considered an inherent properties of the boronized graphite material set forth in the prior art, because Yamahira teaches the same boronized graphite material employed by Applicant. Furthermore, "products of

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identical chemical composition can not have mutually exclusive properties. "A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658(Fed. Cir. 1990). In the instant case, the boronized graphite material of Yamahira employees the instant characteristics because it possesses identical chemical composition set forth by Applicant.

Therefore, Yamahira anticipates the instant claims.

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8 & 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamahira et al. JP 08-162095.

Yamahira teaches a boronized graphite material as described in the § 102 rejection hereinabove.

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The reference is silent to an electrode porosity of 0.2 to 0.6.

However, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to employ an electrode porosity of 0.2 to 0.6, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). The skilled artisan recognizes that the porosity effects utilization of the electrode.

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamahira et al. JP 08-162095 in view of Bito et al. U.S. Patent 5,474,861.

Yamahira teaches a boronized graphite material as described in the § 102 rejection hereinabove.

The reference is silent to adding silicon in an amount of 0.1-5wt%.

Bito teaches that it is conventional to employ silicon in cathodic material of non-aqueous electrolyte secondary batteries. See the Abstract. The addition of such material improves service capacity with repetition of charge and discharge (col. 3, lines 40-50).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to employ the silicon of Bito in the cathode of Yamahira, in order to improve service capacity upon repetition of charge and discharge.

As to the employing silicon in an amount of 0.1-5wt%, it would have been obvious to employ said amount, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA1980). The skilled artisan recognizes that the amount of silicon directly effects conductivity of the electrode.

### *Response to Arguments*

Applicant contends that JP 08-162095A is patentably distinct from the instant claims because the reference teaches a conductive agent of born-contained graphite in the electrode mixture, instead of a positive electrode



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formed from boronized graphite. Applicant asserts that the distinction is made because the positive electrode is formed from boronized graphite only, which is active in charging-discharging reaction as opposed to the conductive agent of '095. This argument is not persuasive. In accordance with MPEP 2112.01, "[p]roducts of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable.

Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). In the instant case, the boronized graphite inherently participates in the charge/discharge reaction because it is made from the same material and placed in the same electrochemical environment as the instant claims. Therefore, the rejections over Yamahira et al. JP 08-162095 are maintained.

### *Conclusion*

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply

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is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communication from the Examiner should be directed to Monique Wills whose telephone number is (571) 272-1309. The Examiner can normally be reached on Monday-Friday from 8:30am to 5:00 pm.

If attempts to reach Examiner by telephone are unsuccessful, the Examiner's supervisor, Michael Barr, may be reached at 571-272-1414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information


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for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MW

3/05/06



**MICHAEL BARR**  
SUPERVISORY PATENT EXAMINER